

Gas in Dusty Disks Around Main-sequence Stars

Alexis Brandeker¹, René Liseau¹, Göran Olofsson¹, and Malcolm Fridlund²

(Email: alexis@astro.su.se)

¹Stockholm Observatory, Stockholm, Sweden

²ESA-ESTEC, Noordwijk, The Netherlands

In the last two decades, increasingly sensitive observations have enabled detection of emission from dusty disks around stars of widely different ages. As a result, we now have some information on the general evolution of the dust in disks. The evolution of the gas in disks, however, has been much more difficult to assess, mostly due to the difficulties in detecting the cold disk gas of older disks. Here we present results from recent searches for disk gas. In particular, we discuss spatially resolved observations of gas around the main-sequence star β Pictoris, where we find emission from metallic gas as far out as 323 AU from the star and 77 AU above the disk mid-plane. Considerations of the strong radiation pressure on the metallic gas suggest the presence of an invisible braking medium. Finally, we comment on the relevance of gas disk evolution to planet formation and the TPF/Darwin mission.

